TECHNICAL
MANAGEMENT TEAM MEETING NOTES

January 23, 2002, 9:00 a.m.-12 p.m.

CORPS OF ENGINEERS NORTHWESTERN DIVISION HEADQUARTERS
PORTLAND, OREGON

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS
Facilitator: Donna Silverberg

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

FLOOD CONTROL:
Chan Modini showed flood operations/storage reservation diagrams using the Libby project as an example. In a thorough presentation, TMT was walked through the calculations the COE uses to establish flood control curves – and how those curves are modified during a given year based on actual reservoir elevations. Currently, all data is coordinated with the various climate/weather agencies on a monthly basis; bi-monthly curves show partial data and are used for trending. The COE will next prepare a presentation on "initial control flows" and how Libby would look under VARQ as Lesson 2 on flood control issues to share with TMT.

WATER MANAGEMENT PLAN:
Comments from Montana and NMFS have been received and are on the TMT web page. ODFW has completed their draft and will meet with the Governor's office to review and have in by the end of the day. USFSW will do the same.

Process: The Action Agencies will receive, review and respond to comments to the Water Management Plan and attach them as an appendix to the 1-Year Implementation Plan. They will

also share the WMP with IT at an upcoming meeting. Finally, NMFS will write a letter of response to the completed Plan.

CRITFC's 2002 River Operations Plan:
Kyle Martin presented principles and concepts that will be the backbone of this year's River Operation Plan from CRITFC. The anticipated release date of the plan is the end of February. Kyle will present the plan to TMT at a later date and inform the group of any other opportunities to learn more about the plan.

Montana Comments RE: WMP:
Jim Litchfield explained to the group that key issues of concern for Montana are: VARQ, Hungry Horse and Libby. Montana believes refill should be a high priority. They are also concerned about exceeding the gas cap of 110% and increasing power capacity at Libby that would lead to more rapid fluctuations in the reservoir's elevations. Flexibility in the rule curve is also an issue. All comments from Montana have been posted on TMT's web page by the COE.

WATER SUPPLY FORECAST CORRECTION CURVES:
CRITFC's Kyle Martin presented an option for TMT to consider for helping project seasonal trends. The handouts can also be found on CRITFC's web page. The River Forecast Center also provided a handout of its 1970-2001 "verification study" to TMT. In reviewing the data provided, it became even clearer that weather and water forecasting is difficult!

CHUM DEWATERING COMMENTS:
A request was made at the last TMT meeting to assign value to each of the criteria listed in the NMFS 1/9/02 memo regarding considerations that should be made when faced with the difficult decision of dewatering chum redds in low flow years. Paul Wagner said the water year would determine criteria, while Cindy Henriksen reiterated the need for TMT, as a group, to try to develop a qualitative measurement of each of the criteria.

Action: TMT members will review Paul Wagner's list of criterion and bring suggestions for a high, medium, or low priority rating for each. These criteria are for low water years only. The group will engage in an exercise at the next TMT meeting (2/5) to see where initial thoughts might be.

BURBOT UPDATE:
Scott Bettin will forward an update from Idaho Fish and Game (with pictures) to TMT members. He will provide more updates at future TMT meetings. Currently, Libby is operating at 14.5 kcfs outflow.

TMT WEB PAGE:
Cindy Henriksen walked through the 2002 site, and received many compliments on the new layout from the group. While the site was currently down, the COE hopes to have all access issues resolved as soon as possible so that TMT and others can utilize the tools and data.

MID-MONTH FORECAST:

Cindy reported on the mid-month forecast from the River Forecast Center. The report can also be found on a link to the TMT web page.

FINALIZE EMERGENCY PROTOCOLS:
Oregon and COE staff and lawyers met and made legislative mark-ups together. Ron Boyce said the mark-ups will be discussed and finalized at the Oregon Governor's meeting today. If they are approved as written, Cindy will email the new draft to TMT before finalizing at an upcoming TMT meeting.

NEXT MEETING, February 6:
Agenda items:

- Lesson 2 Flood Control
- Water Management Plan: Updates on process and presentation
- Chum Dewatering Exercise
- Burbot Update
- Early Bird Forecast
- Emergency Protocols – Finalize?
- Results of Transportation Studies (tentative)

I. Greetings, Introductions and Review of the Agenda.

The January 23, 2002 meeting of the Technical Management Team, held at the Corps of Engineers' Northwest Division headquarters in Portland, Oregon, was chaired by Cindy Henriksen of the Corps and facilitated by Donna Silverberg. Please note that this is a summary, not a verbatim transcript, of items discussed and decisions made at today's meeting.

2. Flood Control

This agenda item is a follow-up to a request made at the last TMT meeting, at which some of the participants asked for a fuller explanation of how the Corps' flood control plans are developed, Henriksen said. She then introduced the Corps' Chan Modini, who provided an overview of the Corps' current and historic flood control planning and implementation efforts.

Modini began by describing the development of the Libby flood control operation for 1999, showing end-of-month elevation targets through the season, plotted against the changing runoff volume forecast over time. Modini's presentation showed the volume of storage space that was required in Libby Reservoir during various points in the season

Modini touched on the way the Corps makes flood control operation adjustments over the course of the season, in response to changes in the runoff volume forecast that is finalized once each month. He also went through the difference between system and local flood control requirements, noting that system flood control requirements take precedence over local flood control operations, unless the local flood control requirement is more restrictive. Henriksen reiterated that the overall goal of the Corps' flood control strategy in development of the system plan was to maintain an initial control flow of 800 Kcfs at The Dalles under 1897 flood

conditions.

The group devoted a few minutes of discussion to flood control operations at various individual projects in the system, notably Grand Coulee, Libby and Dworshak. Modini reiterated that the Corps' flood control criteria are recalculated monthly, once the monthly final forecast is received. In response to another question, Henriksen went through the various project minimum flows that are factored into the flood control operation.

Using the overhead projector, Modini then went through an example from the 1999 flood control operation at Libby, illustrating how the flood control rule curve changed over time to take into account a changing water supply forecast.

Ron Boyce asked whether the Corps would be willing to consider going to a twice-monthly flood control calculation, particularly in low to moderate water years when the balance between flood control drafts and retaining water for later use in flow augmentation is particularly critical. Henriksen replied that twice-monthly flood control calculations may be an option for certain types of water years, but the Corps would have to have final quality water supply forecasts twice each month. Don Laurine of the River Forecast Center noted that such an effort would require a significant increase in RFC workload.

Part of what we struggle with every year is the timing of the transition point between the flood control operation and the refill operation, said Jim Litchfield – there almost always comes a point in the season where the flood control draft begins to eat into the probability of June 30 refill. Modini replied that this transition point is factored into the rule curve. It was agreed that a future TMT agenda will include a description of how initial control flows and VARQ are calculated and factored into the operation.

Has the Corps considered deeper drafts in the storage projects during the October-December time frame, to reduce the need to draft during the late winter and early spring period? Boyce asked. In other words, he said, can you shape your flood control drafts to provide more biological benefit to chum? That is an option, Henriksen replied, but in very low water years such as last year, if we would have gone below the flood control rule curve earlier in the season, there is no way that we would have even come close to our April refill targets – that's the caveat. In the fall, we have little or no information about the upcoming water year, Henriksen said.

3. 2002 Water Management Plan

Henriksen said Montana's comments on the 2002 WMP have been posted to the TMT web page. Scott Boyd said NMFS has also provided some comments, primarily editorial in nature; to date, these are the only comments received. Boyce said ODFW is also working on comments, which will be submitted by close of business today. David Wills said the Fish and Wildlife Service also hopes to submit its comments later today.

The Corps' plan is to incorporate the TMT comments received into a new draft, then submit the revised Water Management Plan to NMFS? Boyce asked. What's the next step in this process? The final Water Management Plan will be submitted to the Implementation Team, Boyd

replied; the action agencies are also responsible for responding to the comments that are not incorporated. NMFS will then express its approval or disapproval of the 2002 Water Management Plan. In the meantime, said Henriksen, the action agencies will be working on the mid-year WMP update.

A. CRITFC 2002 River Operations Plan. Kyle Martin described this presentation as a preview; the full 2002 ROP will not be available until next month. He said his goal was to lay out the main principals of the plan at today's meeting; he asked that any comments be submitted to him after today's meeting. He described how the CRITFC River Operations Plan was developed – the historic water years used, the incorporation of water supply correction curves, the requirements of the Biological Opinion. He said he assumed a 93-MAF water supply volume for the purposes of the 2002 River Operations Plan, the overall goal of which is a more normative hydrograph, with normally-timed peaks and troughs in flow.

Martin spent a few minutes going through the River Operations Plan, noting some of the areas where the CRITFC plan likely differs from the action agencies' Water Management Plan. He noted that, in the CRITFC plan, he had shifted the target refill date backward from June 30 to May 31, with the projects passing inflow throughout the month of June. The CRITFC plan also assumes 427 KAF of flow augmentation volume from Idaho, that the Nez Perce/State of Idaho plan for Dworshak operations will be implemented in 2002, and that spill would occur from March through October and from April through September at various projects in the system, a different regime than that called for in the BiOp.

In response to a question, Martin said the CRITFC plan will be presented at various fora throughout the region once it is completed and approved by CRITFC's tribal members.

B. Montana Comments on 2002 WMP. Henriksen reiterated that Montana's comments have been posted to the TMT webpage. In general, said Litchfield, we thought the draft Water Management Plan was a good effort; we especially appreciated the emphasis on refill, but did ask that VARQ implementation receive full consideration. The group devoted a few minutes of discussion to the question of how burbot, sturgeon and bull trout operations will fit into the 2002 Water Management Plan.

4. Water Supply Forecast Correction Curves.

Martin led this presentation, noting that, every year, the TMT spends an inordinate amount of time arguing over some extremely small volumes of water. If you had more accurate forecasts available sooner, he said, that might help reduce some of that conflict. The water supply forecasts issued by the River Forecast Center obviously attempt to forecast future trends, Martin said; he spent a few minutes going through the data sets and equations used to produce the RFC's forecasts.

Martin then described his proposed water supply correction curves, noting that, while the tool is still a work in progress, its intent is to ensure that as much water is left in the storage reservoirs as possible for flow augmentation later in the season, rather than being unnecessarily drafted for flood control space that would not be needed if more accurate forecasts were

available. He distributed a handout describing the correction curve tool; for a copy, please contact Martin directly at 503/731-1314.

Don Laurine of the River Forecast Center noted that what Martin is proposing is simply operating to a different risk analysis, based on a selection of historic water years and runoff shapes. What does this mean for TMT? Silverberg asked. The TMT would need to look at how this analysis would change the risk analysis underlying the flood control operation, Laurine replied. I'm not saying this analysis will provide the perfect answer, Martin replied; I'm saying its intent is to make better use of the available water we have from year to year.

Laurine went on to say he does not disagree with Martin's point that there is some bias in most years' forecasts; however, he said, you need to bear in mind that, when the January final forecast is produced, typically we've only got 40% of the annual snow pack on the ground, with 60% yet to come. In other words, he said, there is a lot of uncertainty every year. Uncertainty is one thing, said Litchfield, but if there is a consistent bias to the forecast, that's something we ought to be able to get our hands around. And the RFC is working to improve its forecasting every year, Laurine replied.

Is it fair to say that, in general, dry years have turned out to be dryer than expected or forecast, while wet years have tended to be wetter than forecast? Wagner asked. That is sometimes correct, was the reply. Henriksen noted that, in years such as last year, when the forecast is dry, there is no flood control operation. We understand that, said Boyce; it's the in-between years that are problematic. After a few minutes of discussion, it was agreed that the TMT will re-address this topic at a future meeting.

5. Chum Dewatering Comments

Wagner said his hope for today was that the TMT would be able to discuss relative priorities for some of the chum dewatering criteria on the list he developed two meetings ago. I attempted to do so before today's meeting, Wagner said; my general conclusion is that those priorities depend on the type of water year it was. Henriksen observed that the chum dewatering criteria would not be needed in high water years; her assumption is that the prioritized criteria would be needed only in low water years.

After a few minutes of discussion, it was agreed that more time is needed to mull over this issue; it was agreed to discuss it further at the next TMT meeting, with the goal of developing a non-agency-specific list of at least the most important factors to be considered in the chum dewatering decision in low-water years. It's a qualitative exercise, rather than a quantitative exercise, Henriksen said – it would simply be helpful to know which of the criteria on Paul's list would be designated as highest- and lowest-priority for the TMT in a low water year. It was agreed that the group will have such a discussion at its next face-to-face meeting, to be limited to 20 minutes' duration; Silverberg asked each TMT member to spend a few minutes prior to that meeting weighing their own suggested priorities.

6. Burbot Update.

Scott Bettin said he will bring in some photographs of burbot to the next TMT meeting; the fish have been moving everywhere, he said, but at this point, we don't know whether or not any spawning is occurring, or how the burbot are responding to this flow regime. That's why we're doing the study, of course, Bettin said, adding that further updates will be provided as more information becomes available.

7. TMT Web-Page Update.

Henriksen noted that there have been some access problems for the TMT website in recent days; she said the Corps is working to resolve those problems. She said the web page has been updated in response to some of the comments received at the last TMT meeting, and spent a few minutes demonstrating the various features of the new and improved website.

8. Mid-Month Forecast.

Henriksen said the RFC has issued the January mid-month water supply forecast; it is available via the RFC homepage. At Grand Coulee, the January-July forecast is now 58.6 MAF, down 600 KAF from the January final. At Lower Granite, the April-July forecast is now 18.9 MAF, 87% of average, down from 20 MAF in the January final. At The Dalles, the January-July forecast is now 96.1 MAF, down from 98.7 MAF in the January final. That's 91% of average at The Dalles, Henriksen said, adding that significant amounts of precipitation have fallen since the mid-month forecast was developed. The February early bird water supply forecast is expected to be available soon.

9. Other.

A. Emergency Protocol Update. The meeting between State of Oregon and Corps of Engineers legal counsel has now taken place and was apparently quite productive, Boyce said; there is a meeting at the Governor's office today to discuss the proposed changes to the emergency protocol language, after which the proposed language will be sent to the Corps, hopefully by later today. After that, he said, we'll distribute the revised emergency protocols to the TMT, with the goal of finalizing them at the next face-to-face meeting of this group. If you have any heartburn about the proposed changes, Silverberg said, please let us know sooner rather than later.

10. Next TMT Meeting Date.

The next face-to-face meeting of the Technical Management Team was set for Wednesday, February 6. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

January 23, 2002

Name	**Affiliation**

Larry Beck	COE
Scott Bettin	BPA
Ron Boyce	ODFW
Scott Boyd	COE
Ruth Burris	PGE
Pete Dickerson	COE
Margaret Filardo	FPC
Ray Fukunaga	River Forecast Center
Cindy Henriksen	COE
Don Laurine	River Forecast Center
Jim Litchfield	Montana
Ningjen Liu	IPC
Kyle Martin	CRITFC
Chan Modini	COE
Tony Norris	Reclamation
Mike O'Bryant	Columbia Basin Bulletin
Chris Ross	NMFS
Laura Scott	Advanced Energy
Donna Silverberg	Facilitation Team
Ken Soderlind	COE
Rudd Turner	COE
Paul Wagner	NMFS
David Wills	USFWS